

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): ~~In aA~~ submount equipped with comprising:

a submount substrate; and

a solder layer formed on a primary surface of said submount substrate,

~~a submount~~ wherein the density of said solder layer before melting is at least 50% and no more than 99.9% of the theoretical density of the material used in said solder layer.

Claim 2 (currently amended): A submount as described in claim 1 wherein said solder layer contains at least one of the following list: gold-tin alloy; silver-tin alloy; and lead-tin alloy.

Claim 3 (currently amended): A submount as described in claim 1 wherein said solder layer before melting is formed on said submount substrate and includes a first layer ~~having containing~~ silver as a main component and a second layer, formed on said first layer, ~~having containing~~ tin as a main component.

Claim 4 (original): A submount as described in claim 1 further comprising an electrode layer formed between said submount substrate and said solder layer.

Claim 5 (original): A submount as described in claim 4 wherein said electrode layer contains gold.

Claim 6 (currently amended): A submount as described in claim 4 or claim 5 further comprising a solder adhesion layer formed between said solder layer and said electrode layer;

wherein said solder adhesion layer contains: a noble metal layer disposed on said solder layer side and ~~having as a main component containing~~ at least one of the following list: gold, platinum, palladium, and alloys thereof; and a transition element layer disposed on said electrode layer side and ~~having as a main component containing~~ at least one of the following list: titanium; vanadium; chromium; zirconium; niobium; and alloys thereof.

Claim 7 (currently amended): A submount as described in ~~any one of claim 1 through claim 6~~ claim 1 further comprising an adhesion layer and a diffusion barrier layer formed between said submount substrate and said solder layer;

wherein:

said adhesion layer is formed so as to be in contact with said primary surface of said submount substrate; and

said diffusion barrier layer is formed on said adhesion layer.

Claim 8 (original): A submount as described in claim 7 wherein said adhesion layer contains titanium and said diffusion barrier layer contains platinum.

Claim 9 (currently amended): A submount as described in ~~any one of claim 1 through claim 8~~
claim 1 wherein said submount substrate contains sintered aluminum nitride or sintered alumina.

Claim 10 (currently amended): A semiconductor device comprising:

a submount as described in ~~any one of claim 1 through claim 9~~claim 1; and

a semiconductor light-emitting element mounted on said solder layer of said submount.